



Pathological Internet use among Malaysia University Students: Risk factors and the role of cognitive distortion



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ABSTRACT

This study examined the risk factors of Pathological Internet Use (PIU) and aimed to identify a structural model of PIU to explore the relationship between cognitive distortion, depression, motivation, loneliness, stressful life events and PIU. A total of 1493 undergraduate students with a mean age of 21.18 (SD = 1.73) years old from Universiti Teknologi Malaysia (UTM) rated on the questionnaire including scales for PIU, cognitive distortion, depression, motivation, loneliness, and stressful life events. Structural equation modelling (SEM) analysis was conducted to test the research models M1 and M2 which determined model M2 was better fit than M1. The result indicated that all the variables were significant risk factors for PIU, cognitive distortion was the mediator of PIU and partially mediated the effect from motivation and stressful life events to PIU, fully mediated the effect of depression to PIU; while, depression was the second mediator which partially and fully mediated the effect from stressful life events and loneliness respectively to cognitive distortion. The multi-group analysis was applied to test the difference or moderate effect of Internet use group (MMORPG, SNS, general) on the final structural model M2. The result confirmed the invariance of the structural model across groups. The discussions of results were based on cognitive-behavioral model and previous literatures related PIU. The implication of future study was discussed.

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1. Introduction

People spend more and more time on Internet ranged from 19 to 68 h per week, due to the increasing number of attractive Internet applications, and its convenience of life (Hardie & Tee, 2007; Li, Wang, & Wang, 2009). Beside its benefits on academic, economic, and social aspects, the negative consequences of long-time Internet use were stressed by numerous previous research, such as declined academic achievement (Chou & Hsiao, 2000; Kubey, Lavin, & Barrows, 2001; Soule, Shell, & Kleen, 2003), interpersonal relationship with others (Chou & Hsiao, 2000) and physical health problems (Kim & Chun, 2005).

Griffiths (1998, p. 73) indicated that “excessive use of the Internet may not be problematic in most cases but the limited case study evidence suggests that for some individuals, excessive Internet use is a real addiction and of genuine concern”. The term to describe those people is not consistent, which include “Pathological Internet use, Internet Addiction Disorder, Internet addiction, Internet addicts, Problematic Internet use, computer-medicated communication addicts, computer junkies, maladaptive patterns of Internet

use, etc.” (Beard & Wolf, 2001; Caplan, 2002; Chou, Chou, & Tyan, 1999; Davis, 2001; Goldberg, 1996; Young, 1996). As the number of Internet user increased rapidly (usage rate increased 528.1% from 2000 to 2011) (Internet Usage World Stats – The Big Picture – Population Statistics, 2011), more and more people will be at the risk of developing pathological Internet use. In light of this, the increasing population and negative consequences of addiction or pathological Internet use should not be neglected.

Some special Internet activities were found to be more attractive and addictive, which were associated with compulsive Internet use or pathological Internet use, such as the online game, social networking, chatting (Grüsser, Thalemann, & Griffiths, 2007; Meerkerk, Van den Eijnden, & Van Rooij, 2006; Van Rooij, Schoenmakers, Van de Eijnden, & Van de Mheen, 2010), and the social function was deemed as a special trait of Internet (Chou & Hsiao, 2000; Ju, 2000). And the strongest negative correlation between online game and social network provided the sign of competition between these two Internet applications, which further implied that individual fascinated on online games would spend less time or no time on social network, while individual fascinated on social network would spend less or not time on online games (Van Rooij et al., 2010). Therefore, the Internet users preferred these two online activities may have different characteristics, such

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as gender, motivation. Male students reported higher rates of playing online multi-user games, while female students reported higher rates of social networking (Durkee et al., 2012).

Online gaming, such as massively multiplayer role-playing game (MMORPG) (i.e. World of Warcraft) was found to be most associated with pathological Internet use (Ducheneaut & Moore, 2004; Van Rooij et al., 2010). Although the partial reinforcement effect (PRE) is the critical psychological component of gaming addiction, the MMORPG obtain the unique advantages from Internet compared with traditional games. The Internet provides a virtual context for gamers to build their own virtual organizations. And the online social interaction is the important element to play the game with their group members. Another new Internet application, social networking site (SNS) (i.e. facebook.com, xiaonei.com) makes up a new pattern of pathological Internet use. Although there is limited research on this topic, the negative influences on users' social and psychological function were detected (Daria, Kuss, & Griffiths, 2011; Spraggins, 2009).

Both of these Internet applications – MMORPG and SNS have huge number of users and the amount is increasing with high speed (The Nielsen Company, 2009; Young & Nabuco de Abreu, 2011). They were always chose as the most popular Internet application (Durkee et al., 2012; Kim, LaRose, & Peng, 2009; Whang, Lee, & Chang, 2003; Yen, Ko, Yen, Wu, & Yang, 2007), which have some similarities related to Internet unique traits, such as virtual environment, remote social interaction, but they are totally different in content and function. Students who are attracted by these two Internet applications may be different in some aspects, such as motivation and gender. And those students who pathologically use these two applications may also share some similar characteristics, such as loneliness and cognitive distortion. Research compared these two Internet application is limited. This research focused on risk factors of PIU based on different kind of Internet use groups, such as SNS, MMOPRG. The main objective of this study is to identify a structural model of Pathological Internet Use (PIU) and explore the effect of cognitive distortion, motivation, stressful life events, depression and loneliness on PIU, examine the effect of Internet use group on the structural model of PIU.

2. Research model

Based on Davis (2001) cognitive-behavioral theory and previous literature (Caplan, 2002, 2003, 2005, 2010; Kalkan, 2012; Liu & Peng, 2009; Mai et al., 2012), cognitive distortion was deemed as an important predictor and the proximal causes of PIU, while, depression was deemed as the distal necessary cause of PIU. However, a study in Chinese Taiwan found a different result, which indicated that depression tendency was negatively related to PIU and mediated the effect from stressful life events and time spent

on Internet to PIU (Harn, Wu, Chen, & Chang, 2007). Thus, two models (model M1, model M2) were proposed to examine the effect and mediating role of depression and cognitive distortion on PIU (see Figs. 1 and 2). In model M1, cognitive distortion and depression predict PIU, and partially mediate the effect from stressful life events, loneliness and motivation to PIU (see Fig. 2). In model M2, cognitive distortion predict PIU, and partially mediate the effect from depression, motivation, stressful life events, and loneliness to PIU, while, depression partially mediate the effect from stressful life events, motivation, loneliness to cognitive distortion.

3. Method

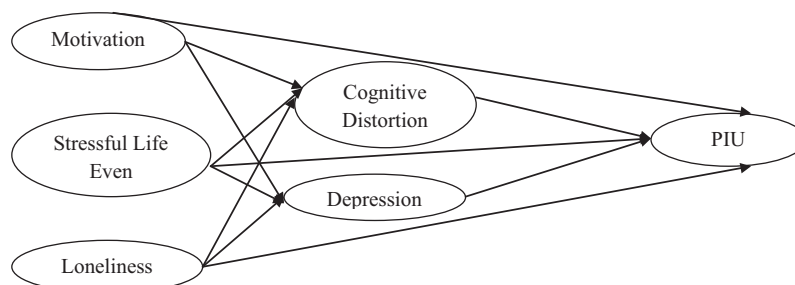
3.1. Participants

A total of 1493 valid survey forms were collected from undergraduate students in Univeristi Teknologi Malaysia (UTM). The average age of these students were 21.18 (SD = 1.73) years old, who had 7.59 (SD = 3.08) years of experience on using Internet. Among the 1493 participants, 838 (56.10%) were male students and 655 (43.90) were female students. The ethnic composition of respondents in this study is 1005 (67.30%) for Malay, 384 (25.70%) for Chinese, 31 (2.10%) for Indian, and 73 (4.90%) for others. The Internet use groups were divided based on participants' self-rated on their favorite Internet application. There were 170 (11.40%) MMORPG users, 1090 (73%) SNS users, 182 (12.20%) general users, and 51 (3.40%) other users.

3.2. Measurements

3.2.1. Pathological Internet use

The Internet Addiction Test (IAT) was used in this study to measure the level of Pathological Internet Use (PIU). It is a 20-item self-report instrument used to measure the individual's Internet use from the perspective of psychological symptoms and behaviors, such as psychological dependence, compulsive use, and withdrawal, problems of school, sleep, family, and time management, which was developed based on Young's YDQ (Young, 1996; Young & Nabuco de Abreu, 2011). It has been validated in many languages including English, Greek, Italian, French, Turkish, Chinese, Malay, and Korean (Chang & Law, 2008; Khazaal et al., 2008; Ng, Isa, Hashim, Pillai, & Harbajan Singh, 2012; Panayides & Walker, 2012; Yang, Choe, Baity, Lee, & Cho, 2005; Young & Nabuco de Abreu, 2011), could be adapted and applied in outpatient and inpatient settings (Young & Nabuco de Abreu, 2011). In this study, the Cronbach's alpha for IAT was 0.90, for the three parcels ranged from 0.75 to 0.83.



Note: PIU=Pathological Internet Use

Fig. 1. Model M1.

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